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THE MONIST

ON THE MONISM OF PROFESSOR MACH.[1]

A CONSPICUOUS effort at realizing a monistic conception of life and the world has been put forward by a succession of thinkers, those who are interested in philosophical considerations as well as in natural science and nature-philosophy. The way in which the effort was made has differed greatly, however, in each case. We need think only of such names as Spinoza, Berkeley, Haeckel, and Ostwald. But perhaps even these have something in common with each other if we contrast their conceptions with Mach's scientific point of view.

Time and again, and even in his latest work,[2] Mach proclaims with especial emphasis his naturalistic standpoint in contrast to the philosophical. And it really seems to me as if in this circumstance lies one of the most noticeable differences between Mach's standpoint and that of any exponent of philosophy or natural philosophy, including also the Editor of this periodical.

Professor Mach congratulates the philosopher upon finding himself "in the fortunate position of possessing unshakable principles," while on his side he is satisfied as a naturalist "to consider even his surest and best-founded views and principles as provisional."

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[1] Translated from Professor Kleinpeter's manuscript by Lydia Gillingham Robinson.

[2] *Erkenntnis und Irrtum, Skizzen zur Psychologie der Forschung.* Leipsic: Barth, 1905

Under these circumstances the question arises how it can be worth while for the scientist to content himself with so modest a rôle. Is he really at so great a disadvantage in comparison with the philosopher, and is it right that his speculations should rest on so weak a basis?

So many of the systems of world-conceptions with which naturalists have furnished the world seem to confirm this idea. But the well-informed man knows, too, how far removed from this are Mach's ideas and trend of thought. And if we glance over the greatest part of the work of this untiring investigator, it will not be hard to see wherein he discovers the critical point of the conceptions of natural science. Mach's glance is directed constantly not on the incomplete conclusions of natural science in regard to the entirety of the universe, but much more on the *modus operandi,* the method employed by the naturalist, which Mach has endeavored to lay bare by painstaking critical historical research, and which he constantly strives to promote and to free from all impediments, i. e., of a metaphysical nature. Thus his aim has always been to construct a monistic interpretation and at the same time to remove the barriers which separate one department from another. Especially has he endeavored to bring psychology and physics closer together in this way and to find a common ground for them. If we consider that Fechner's *Elements of Psychophysics* was published a few years before Mach came forward with his views (a work which according to Mach's own statement made a powerful impression upon him), then we may be justified in pointing to the impulse emanating from this work as the motive power which chiefly influenced Mach's thought in this direction. That Mach's speculations were crowned with success is perhaps mainly due to his early acquaintance with Kant's train of thought.

For, however the case may be, the fact remains that

Mach searched for a common view-point for both psychical and physical in essential methodological interests and found it soon after the appearance of Fechner's greatest work, and gave it to the world.

Mach's monism is not a monism of system but a monism of method.

Critical observation of the naturalist's activity formed the starting-point of his efforts in the general field of active philosophical work. Probably the first question that he put to himself was, What forms the particular subject of investigations in natural science? It was the answer to this which placed him in opposition to the traditional point of view of almost all physicists and most philosophers. The former had so accustomed themselves to the mechanical conception of all nature that they were hardly in a position to comprehend how any one could assign any other task to physics than the investigation of the distribution of matter and its operative forces, or in a later stage, of matter and energy (Maxwell), or of matter and motion (Kirchhoff). But philosophers had not unlearned the habit of looking with contempt upon the universe of phenomena since the time of the Eleatics; their glance remained rigidly fixed upon the "thing-in-itself." Then came Mach who explained as the object of the naturalist's occupation "sense-perceptions," a name which he chose under compulsion in lieu of a more suitable one, and which he later replaced by "elements"; for the sense in which he wished to have the word taken deviated to some extent from the customary usage. By the sound of the word we are inclined to put too much emphasis on the perceiving subject. But it was far from Mach's intention to emphasize this connection from only one point of view; on the contrary he saw at the time in sensations the material of the *actual* world. In this his fundamental views are essentially distinguished from those of idealistic philosophy, Berkeley's among others. We may even call them realistic, but their realism indeed is essentially different from so-called philosophical realism. Then there are a number of philosophers, as for instance Stumpf, to whom the physicists are not physical enough, who never tire of declaring that on the other side of the world of phenomena there exists another, the actual world in which the laws of physics become valid, and which forms the end and aim of the physicist. Particularly, since the utterance of Hertz that it was enough for the physicist to possess a picture of the universe whose existence "in-itself" Hertz still clung to, though its investigation "in-itself" he had already recognized as superfluous, most of the physicists learned to be reconciled to Mach's fundamental conception; and it is to some extent amusing when philosophers in the alleged interest of physics designate something as absolutely necessary which the physicists themselves had previously learned to renounce, and prepare to instruct them upon the character of their science in which of course the philosophers themselves are only laymen.

We can say without fear of contradiction that to-day it is no longer seriously questioned that sense-perceptions form the object of the naturalist's research, that its aim is the construction of a legitimate connection between them, and that it is the task of scientific representation to give an abbreviated account of it by a reconstruction in thought.

But on the other hand sense-perceptions form also the object of psychological research. Consequently the substance does not differ in the two domains, but only the line of investigation. Since this, however, changes also within the realm of natural science, the boundary disappears which had existed until now between these two great departments of science, and also the contrast between the psychical and the physical. What we call physical and psychical is constructed out of but one kind of elements. In the vast numbers of constantly changing elements we notice only certain relations. We find that a definite perception, which we designate perhaps as a table, seems to be always combined with certain tactile and muscular sensations which can be separated in some way; i. e., a definite group of *always* recurring sensations does not exactly appear, but the permanent element continues in a functional dependence in consequence of which still other elements appear joined to it in the case where there is a particular group of sensations. These centers of relation form what are commonly called "bodies," and *one* also of these centers or bodies is the ego.

The renowned Clifford, whose contributions to the theory of cognition have been too little heeded, also expresses this same thought in the following words:[3] "My feelings arrange and order themselves in two distinct ways. There is the internal or subjective order, in which sorrow succeeds the hearing of bad news, or the abstraction "dog" symbolizes the perception of many different dogs. And there is the external or objective order, in which the sensation of letting go is followed by the sight of a falling object and the sound of its fall. The objective order, *qua* order, is treated by physical science, which investigates the uniform relations of objects in time and space. Here the word "object" (or *phenomenon*) is taken merely to mean a group of my feelings, which persists as a group in a certain manner; for I am at present considering only the objective order of my feelings. The object, then, is a set of changes *in* my consciousness, and not anything out of it.....The inferences of physical science are all inferences of my real or possible feelings; inferences of something actually or potentially in my consciousness, not of anything outside it."

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[3] *Lectures and Essays.* London, 1901. Vol. 2, page 52.

As far as the ego is particularly concerned Mach points out, especially in his latest work, that the same thought-process which brings us to the concept of our own ego leads also to the concept of the ego of others. In a certain sense we are reminded too of Kant, and his attempt to refute idealism can be so interpreted or re-interpreted as to mean that the same processes lead to the formation of the concept of bodies as of the ego. In this way there has arisen from the original pursuit of a monistic point of view of the work of cognition among naturalists as well as psychologists a kind of philosophical idea which, however, many philosophers comprehend in their own way, i. e., as the foundation of a system. But it is characteristic of any system that it begins with some few self-evident propositions and descends from these to particulars. Mach's method was exactly the reverse and it is easy to understand how it was unavoidable that misunderstandings would arise from such a re-interpretation of his procedure.

But Mach's monistic point of view is not exhausted with the maintenance of the point of departure which has just been characterized; it is exemplified also in the fact that everywhere the ground is broken for a unification of phenomena. It is true that Mach dispelled the dream of a universal mechanical conception of physics, but only in order to gain a broader basis for the conception of the operations of nature as a whole, and, consequently, too, of those in living and animate organisms. His new work *Erkenntniss und Irrtum* is very significant in just this direction. The psychology of investigation is his subject; and what Mach strives in every way possible to set forth, what the treasure of his rich "direct" and "indirect" experiences suggest to him, consists in the fact that the activity of the investigator does not differ essentially from that of the thinker in the ordinary course of life; and that this in turn is not essentially different from the animal's manner of proceeding; nor this again from the phenomena of inorganic nature. A noble feature of the unification of our world-conception permeates the whole. Here, too, Mach is far from advancing one of the philosopher's own claims to the statement of a perfected truth; on the contrary he says expressly in this place that "the acceptance of a soul that is free and operates without law will always be hard to refute, since experience will always produce an irreducible residuum of facts"; but "the free soul as a *scientific* hypothesis, and even a search for it" is a *methodological* aberration according to his opinion.[4] Here too we come upon the emphasis of a methodological principle.

And if we scan the great methodological principles which Mach has established we shall find again throughout them the foundation of a monistic manner of thought. Formerly there was a dualism with reference to the conception of the sciences which were distinguished *a priori* and *a posteriori* as sciences of pure thought and of experience. Mach recognizes but one category. In his new work he refers even arithmetic to experience in contrast to a familiar utterance of Gauss. Not only the sources of science, however, are posited as everywhere the same (namely in experience) but also the degree of certainty knows only quantitative distinctions. There is no such thing as knowledge which is absolutely and unconditionally valid. The essence of science is the same everywhere, a means by which we are spared direct experience. Its value lies in this economy and in the possibility arising from it, of enlarging our knowledge. Science has received a new definition, a methodological definition; and the same is true of the principles of comparison, transformation and adaptation. Now if we look back the same fundamental thoughts return to us; the essential thing is doing and not being. The task of science is "the discovery of identity amidst diversity" (Jevons); its aim, the aim of research, must be directed towards a possible unification. Different points of view are possible and useful, but ultimately there must be one from which we can survey the entire field of human activity.

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[4] *Erkenntniss und Irrtum*, p. 25.

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